

**Experience of perceived stress and associated factors during Covid19 lockdown among hoteliers of Pokhara, Nepal**

**Abstract**

It is great time to know the psychological consequences and know how hoteliers are coping to it because of Covid19 lockdown. Thus we tried to access prevalence of perceived stress and associated factors among hoteliers of Nepal. A hotel based quantitative descriptive cross-sectional study was done using a structured questionnaire cum interview schedule. The data was recorded in Microsoft Excel sheet, and was analyzed using Statistical Package for Social Sciences version 23. A descriptive analysis was done using mean, frequency, percentage and standard deviation. Bivariate analysis was done using Mann-whitney U test and Kruskal Wallis test as the data were non-normal. Significance level was observed at p-value less than 0.05. There was significant relation between stress score and variables like age, gender, marital status, smoking, alcohol, bread winner, sound sleep, family conflict, too many responsibilities, pay loans, pay rent of hotel, other source of income, paying salary, happy with

government, lockdown only solution, economic problem and social problems. (p -value <0.05) Male had significantly higher stress than female. Similarly married participants showed significantly higher stress than unmarried. Stress level has been increased among the hoteliers of Nepal due to covid19 lockdown and has affected the tourism sector very badly.

Keywords: Covid19, Hoteliers, Perceived stress, Nepal, Tourism,

## **Introduction**

Corona virus disease 2019 (COVID-19) is an emerging, rapidly evolving situation. It is highly infectious disease caused by a novel virus belonging to a family known as corona virus. The COVID-19 pandemic is a global health emergency that could potentially have a serious impact on public health, including mental health(1) .During the COVID-19 pandemic, the term lockdown being used for actions related to mass quarantines or stay-at-home orders(2). By early April 2020, 3.9 billion people worldwide were under some form of lockdown—more than half the world's population(3, 4). The pandemic has created physically and mentally traumatized by the situation and people are becoming more stressed and anxious. COVID-19 and the lockdown situation have brought negative mental pressures for people.(5) The COVID-19 outbreak is having a devastating impact on the global economy which is affecting tourism by 45 -70 percent(6). Domestic tourism industries are also being impacted as about half of the world's population is estimated to be constrained by containment measures. Even people having chronic diseases like chronic kidney diseases and others are having high chances of respiratory problems and increases level of stress(7). Employers and employee of hotel industry are facing devastating reductions in the working time, potential job losses, economic activity which has caused higher stress and anxiety(8). Due to lack of business amid the coronavirus pandemic, hotels across Nepal have decided to shut completely until the situation improves. More than 3,000 hotels will send their staff home because they can't keep paying their salaries with any revenue coming in due to the lockdown. Even if the lockdown is lifted, the hotels will all be bankrupt by the time tourism rebounds(9).

The psychological and social risk health emergencies seem to be even higher during quarantine and isolation measures. It has been associated with high stress levels , depression , irritability and insomnia ,acute stress and trauma-related disorders, more in specific at-risk population(10).During such a situation, we must remain calm and manage our anxiety and fears(11).

Especially Nepal, which is rich in natural, cultural diversity, is depending on the tourist for the development of economic part. It has been stated that tourism contributed 8.5 % of GDP of Nepal. It is said that nearly 9 lakh persons are employed in Hotel and Restaurant of Nepal(12, 13). The cascading effect of the coronavirus has been found to cripple the Nepalese tourism and hospitality industry at an astonishing pace. At a time when hotels, restaurants and tourism sites are shuttered and closed for a prolonged period, many investors and operators are struggling to keep businesses afloat long enough for the opportunity to be back in business. With COVID-19, hoteliers have witnessed firsthand that the mere threat of a pandemic can lead to a sharp drop in tourists, widespread flight cancellations, supply chain disruptions, and severe government restrictions. Previous outbreaks have reported immediate effects, like irritability, fear of contracting and spreading infection to family members, anger, confusion, frustration, loneliness, denial, anxiety, depression, insomnia, despair, to extremes of consequences, including suicide (14). As we have seen the impact of lockdown is becoming more prevalent issues it is great time to know its psychological consequences and know how hoteliers are coping to it. There are very few studies conducted on the perceived stress and associated factors during lockdown among hoteliers and how they are coping with the stress so researchers felt the need of conducting the study. To assess the prevalence of perceived stress and associated factors during Covid19 lockdown among hoteliers.

## **Methods**

### **Study design, Study population and Sample size**

A hotel based quantitative descriptive cross-sectional study was done using a structured questionnaire cum interview schedule to assess the prevalence of perceived stress and associated factors during Covid19 lockdown among hoteliers. Informed written consent was obtained from all the participants. A semi structured tool with face to face interview was conducted. All the 440 hotels of Pokhara Metropolitan City (registered in Hotel Association of Nepal) were the participants.

### **Study Variables**

Dependent variable of the study was “Perceived stress”. The Independent variables were: Age, sex, ethnicity, place of residence, other source of income, types of family, type of residence, smoking, alcohol, marital status, no. of children.

### **Data Collection tools and techniques**

A questionnaire based on research objective was developed. The development of tool was done reviewing of related literature. Tools were prepared in English language and Nepali language. A standard tool was used consisting of 3 section Part I= Questions related to socio demographic information Part II = Perceived stress scale 10 given by Cohen Sheldon(15). Part III= associated factors and phone interview was conducted. Data collection was done after approval of NHRC. Data were collected by using standard questionnaire tool and face to face interview was conducted. Pretesting was done among the 10 % of the sample size by contacting them personally and they were excluded from the study.

### **Ethical approval**

Ethical consideration was obtained from the ethical review board of Nepal Health Research Council (498/2020 P). Data was collected by using standard questionnaire tool and face to face interview was conducted. Informed consent was taken in the written from each respondent by describing the objective of the study. The average estimated time to fill the questionnaire was 20-25 minutes.

### Data management and analysis

Collected data was checked for completeness of information. After that data was coded, entered, classified and analyzed by Statistical package for social science (SPSS version 16).The data was recorded in Microsoft Excel sheet, and was analyzed using Statistical Package for Social Sciences version 23. A descriptive analysis was done using mean, frequency, percentage and standard deviation. Bivariate analysis was done using Mann-whitney U test and Kruskal Wallis test as the data were non-normal. Significance level was observed at p-value less than 0.05.

### Results

Table: 1 Demographic and social characteristics (n=440)

Characteristics	n(%)
<b>Age</b>	
Less than or equal to40	145(32.95)
More than 40	295(67.04)
<b>Gender</b>	
Male	405(92.04)
<b>Education</b>	
Primary/ secondary	149(33.86)
undergraduate	247(56.13)
Postgraduate and above	44(10)
<b>Ethnicity</b>	
Brahmin/chhetri	281(63.86)
Other than Brahmin/chhetri	159(36.14)
<b>Religion</b>	

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Hindu	375(87.23)
Other than Hindu	65(14.77)
<b>Marital Status</b>	
Married	416(94.55)
<b>No of children</b>	
1 or less than 1	148(33.64)
2 or more	292(66.36)
<b>Smoking</b>	
Current	186(42.28)
Ex	172(39.09)
Never	82(1.86)
<b>Alcohol</b>	
Current	298(67.73)
Ex	90(20.45)
Never	52(11.82)
<b>Bread winner</b>	
Self	299(67.95)
Husband/wife	100(22.73)
Father/mother	41(9.31)
<b>Family type</b>	
Nuclear	272(61.82)
<b>Residence Type</b>	
Own	344(78.18)
<b>Family conflict</b>	
No	338(76.82)
<b>Too many responsibility</b>	
Yes	383(87.04)
<b>Pay loans</b>	
Yes	386(87.73)
<b>Pay</b>	
Yes	220(50)
<b>Other sources of income</b>	
No	293(66.59)
<b>Paying salary</b>	
Full	21(4.78)

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Half	273(62.05)
No	146(33.18)
<b>Hope to reopen</b>	
More chances	80(18.18)
Less chances	251(57.05)
Not sure	109(24.78)
<b>Continue Hotel Business</b>	
Yes	307(69.77)
No	33(7.50)
Not Sure	100(22.73)
<b>Happy with government decision</b>	
Yes	157(35.68)
No	95(21.59)
Somewhat	188(42.73)
<b>Lock down only solution</b>	
Agree	158(35.91)
Disagree	188(42.73)
No idea	94(21.36)
<b>Economic problems</b>	
Agree	408(92.73)
Disagree	10(2.27)
No Idea	22(5)
<b>Social problems</b>	
Agree	262(59.55)
Disagree	79(1.59)
No idea	171(38.86)
<b>Sleep</b>	
Always	72(16.36)
Very often	203(46.14)
Sometimes	128(29.09)
Rarely	35(7.95)
never	2(0.45)

Table 1 shows the demographic and social characteristics of 440 samples where almost all of them were male (92.04%) and married (94.55%). More than half of the participants were more than 40 years (67.04%), were Hindu (87.23%) and had 2 or more children (66.36%). Most of them had done undergraduate (56.13), 50% had to pay rent of hotel and were Brahmin/ Chhetri (63.86%). Among the participants, 42.28% and 67.73% were current smoker and alcohol consumer respectively. Almost all of the participants have their own residence (78.18%), no family conflict (76.82%), too many responsibilities (87.04%) and to pay loans (87.73%). Moreover, 67.95% were bread winner and 62.05% had paid half salary. Likewise, more than half (69.77%) wanted to continue hotel business, 42.73% were happy with the Government decision and 92.73% agreed to have economic problems whereas 42.73% disagreed lockdown to be only solution. Likewise, 59.55% had social problems and 46.14% had very often sound sleep.

Table 2 Perceived stress scale-10

Statements	Never n(%)	Almost Never n(%)	Sometimes n(%)	Fairly often n(%)	Vey Often n(%)	Median (Q1-Q3)
In the last 4 months, how often have you been upset because of COVID 19 lockdown and closing of hotel business?	3(0.68)	31(7.05)	138(31.36)	241(54.77)	27(6.14)	3(2-3)
In the last 4 months, how often have you felt that you were unable to control the important things in your life related to hotel business due to COVID 19 lockdown?	2(0.45)	29(6.59)	174(39.54)	209(47.5)	26(8.18)	3(2-3)
In the last 4 months, how often have you felt nervous and “stressed” due to COVID 19 lockdown?	1(0.22)	33(7.5)	126(28.63)	218(49.54)	62(14.09)	3(2-3)
In the last 4 months, how often have you	11(2.5)	198(45)	175(39.77)	50(11.36)	6(0.136)	2(2-3)



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felt confident about your ability to handle your personal problems due to COVID 19 lockdown?						
In the last 4 months, how often have you felt that things were going your way even though there is COVID 19 lockdown?	3(0.68)	61(13.86)	246(55.90)	115(26.13)	15(3.40)	2(1-2)
In the last 4 months how often you found that you could not cope with all the things that you had to do due to COVID 19 lockdown?	5(1.13)	131(29.77)	223(50.68)	74(16.81)	7(1.59)	2(1-2)
In the last 4months, how often have you been able to control irritations in your life due to COVID 19 lockdown?	2(0.45)	64(14.54)	195(44.31)	170(38.63)	9(2.045)	2(1-2)
In the last 4months, how often have you felt that you were on top of things due to COVID 19 lockdown?	2(0.45)	121(27.5)	267(60.68)	46(10.45)	4(0.90)	2(2-3)
In the last 4months, how often have you been angered because of things that were outside of your control due to COVID 19 lockdown?	5(1.13)	225(51.13)	156(35.45)	51(11.59)	3(0.68)	1(1-2)
In the last 4 months, how often have you felt difficulties were piling up so high you could not overcome them due to COVID 19 lockdown?	13(2.95)	83(18.86)	285(64.77)	55(12.5)	4(0.90)	2(2-2)

Overall Score  
Mean(Q1-Q3) -21.24(19-23)  
Median-21.00  
S.D-3.07

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Table 2 describes about the perceived stress scale of the participants with mean 21.24, median 21.00 and s.d. 3.07. It shows that half of the participants sometimes couldn't cope with all the things that they had to do due to COVID 19 lockdown (50.68%) and 54.77% were fairly often have been upset because of COVID 19 lockdown and closing of hotel business. Similarly, the participants felt sometimes (28.63%) and fairly often (49.54%) nervous and stressed due to COVID 19 lockdown. Likewise 64.77% sometimes felt difficulties were piling up so high that they couldn't overcome them due to COVID 19 lockdown. Moreover, in last 4 months, 47.5% and 39.54% were respectively fairly often and sometimes felt that they were unable to control the important things in your life related to hotel business due to COVID 13 lockdown. In last 4 months, 35.45% sometimes have been angered because of things that were outside of their control due to COVID 19 lockdown. But, 55.90% felt that sometimes things were going their way even though there is COVID 19 lockdown and 44.31% had been able to control irritations sometimes in their life during lockdown. In last 4 months, 45% almost never felt confident about their ability to handle their personal problems due to lockdown and 60.68% sometimes felt that they were on top of things due to COVID 19 lockdown.

Table 3 Bivariate association between variables (Wilcoxon test and kruskal wallis test)

Characteristics	Stress Score Median(Q1-Q3)	p-value
<b>Age in years</b>		
Less than or equal to 40	21(18-23)	0.036*
More than 40	21(20-23)	
<b>Gender</b>		
Male	21(19-23)	0.001*
Female	19(18-21)	
<b>Education</b>		
Primary/secondary	21(18-23)	0.097
Undergraduate	22(20-24)	
Postgraduate and above	21(18-23)	

<b>Ethnicity</b>		
Brahmin/ Chhetri	21(19-23)	0.155
Others	22(19-23)	
<b>Religion</b>		
Hindu	21(19-23)	0.353
Non Hindu	21(18-23.5)	
<b>Marital Status</b>		
Married	21(19-23)	0.004*
Unmarried	19(18-21)	
<b>No. of children</b>		
1 or less	21.5(19-23)	0.734
2 or more	21(19-23)	
<b>Smoking</b>		
Current	21(19-23.25)	
Ex	22(20-23)	0.000*
never	20(18-22)	
<b>Alcohol</b>		
Current	21(19-23)	0.002*
Ex	21.5(20-23)	
never	19(17-22)	
<b>Bread Winner</b>		0.000*
Self	22(20-24)	
Husband/wife	20(18-22)	
Father/mother	19(17-22.5)	
<b>Family Type</b>		0.213
Nuclear	21(19-23)	
Joint	22(19-23)	
<b>Residence Type</b>		0.952
Own	21(19-23)	
Rent	21(19-24)	
<b>Sound Sleep</b>		
Always	19(17.25-21)	
Very often	21(19-23)	0.000*
Sometimes	22(21-24)	
Rarely	24(22-26)	

never	22.5(19-22.5)	
<b>Family conflict</b>		0.000*
yes	22.5(21-25)	
No	21(19-23)	
<b>Too many responsibilities</b>		0.003*
Yes	21(19-23)	
No	20(18-22)	
<b>Pay loans</b>		0.01*
Yes	21(19-23)	
No	20(18.75-22)	
<b>Pay rent of hotel</b>		0.000*
Yes	21(19-23)	
No	22(20-24)	
<b>Other source of income</b>		0.000*
Yes	21(18-22)	
No	22(20-24)	
<b>Paying salary</b>		0.001*
Full	21(16-23)	
Half	21(19-23)	
No	22(20-24)	
<b>Hope to reopen</b>		0.387
More chances	21(20-23)	
Less chances	21(19-23)	
Not sure	22(19-24)	
<b>Continue hotel business</b>		0.107
Yes	21(19-23)	
No	22(19.5-23)	
Not sure	22(20-23.75)	
<b>Happy with government</b>		0.019*
Yes	21(18-23)	
No	21(19-23)	
Somewhat	22(20-24)	
<b>Lockdown only solution</b>		0.008*
Agree	21(19-23)	
Disagree	21(19-23)	

No idea	22(21-24)	
<b>Economic problem</b>		
Agree	21(19-23)	
Disagree	16(14.75-21)	0.000*
No idea	21.5(20.75-24.25)	
<b>Social problems</b>		
Agree	21(19-23)	0.021*
Disagree	18.50(14.25-22.50)	
Maybe	229(20-23)	

Table 3 explains the bivariate association between variables using wilcoxon test and Kruskal Wallis test. It shows that there were significant relation between stress score and variables like age, gender, marital status, smoking, alcohol, bread winner, sound sleep, family conflict, too many responsibilities, pay loans, pay rent of hotel, other source of income, paying salary, happy with government, lockdown only solution, economic problem and social problems. (p -value <0.05) Male had significantly higher stress than female. Similarly married participants showed significantly higher stress than unmarried.

### Discussion

The aim of our study is to assess the prevalence of perceived stress and associated factors during Covid19 lockdown among hoteliers. In our study, the mean PSS-10 score was 21.26 which is higher than the study “Anxiety, worry and perceived stress in the world due to the COVID-19 pandemic” done on March 2020 where the mean is 17.4 (16) and the web-based cross-sectional study from Eastern India “Comparative analysis of perceived stress in dermatologists and other physicians during national lock-down and COVID-19 pandemic with exploration of possible risk factors” where the mean PSS-10 score for all doctors was 19.2(17). This can be seen due to the difference in population selected for the study. Likewise the mean PSS score in our study is found to be higher than the online survey “Psychological impact of Lockdown due to COVID-19

pandemic in Nepal” in which the mean PSS score was 17.54 (18) and the online survey “Psychological impact of COVID-19 lockdown” where the mean PSS score was 16.56 (19). Also our mean PSS score is higher than the study “International Prevalence and Correlates of Psychological Stress during the Global COVID-19 Pandemic” where overall mean PSS-10 score was 19.08 (20) and the study “Predicting perceived stress related to the COVID-19 outbreak through stable psychological traits and machine learning models” where the mean PSS-10 score was 18.81 (21). But the mean PSS-10 score of our study was similar to the study done to assess the Perceived Stress and Coping Strategies among B.Sc. Nursing Students of selected Colleges in Pune during COVID-19 Pandemic Lockdown” where the mean PSS was 21.88 (22). Moreover, mean PSS score in our study is lesser than the study “Factors associated with perceived stress, anxiety, depression, insomnia during COVID-19 outbreak among Nursing Students” where the mean PSS score was 22.12 (23).

Furthermore, this study showed between stress score and variables like age, gender, marital status, smoking, alcohol, bread winner, sound sleep, family conflict, too many responsibilities, pay loans, pay rent of hotel, other source of income, paying salary, happy with government, lockdown only solution, economic problem and social problems. ( $p$ -value  $<0.05$ ) This is in contrast to the study done to assess the Perceived Stress and Coping Strategies among B.Sc. Nursing Students of selected Colleges in Pune during COVID-19 Pandemic Lockdown” where no significant association between the perceived stress score and sociodemographic variables was found (22). But it was in line with an online survey of factors associated with self-perceived stress during the initial stage of the COVID-19 outbreak in Nepal where significant association between age and self-perceived stress was found whereas was in contrast as no significant association was found between self-perceived stress and gender, marital status (24). Moreover, the association shown in our study is in line with the study “International Prevalence and Correlates of Psychological Stress during the Global COVID-19 Pandemic” where stress did not significantly differ by education and the stress was significantly different between gender, age and income. But this study was in contrast to our study as this study showed no significant relation between marital status and stress (20). Furthermore, our study is similar to the study “Factors associated with perceived stress, anxiety, depression, insomnia during

COVID-19 outbreak among Nursing Students” where there is no significant difference between stress and family type and education but was in contrast as this study also showed no significant difference between stress and marital status and age (25). Likewise our study is in line with the study “Perceived stress among students in virtual classrooms during the COVID-19 outbreak in KSA” where there were significant associations between the level of stress and gender, age but in difference as this study had significant association between education level and level of stress and also our study differed with this study as this study showed females had a significantly higher mean score of perceived stress level compared to male (23).

In our study, almost all of them were male (92.04%) and married (94.55%) which is in similar to the online survey “Psychological impact of COVID-19 lockdown” where three fifths of the participants were male and three-fourth were married (19) but in contrast to an online survey of factors associated with self-perceived stress during the initial stage of the COVID-19 outbreak in Nepal where 52.1% were female and 74.9% was single(24). Similarly, in our study, most participants were Hindu (87.23%) which is similar to the study “Factors associated with perceived stress, anxiety, depression, insomnia during COVID-19 outbreak among Nursing Students” where 96.2% was Hindu but our study was in contrast to this study as most of them were unmarried (25). Likewise more than half of the participants had nuclear family. This is similar to the online survey on stress, anxiety, depression and their associated factors among health care workers during COVID-19 pandemic in Nepal where more than half participants belonged to nuclear family, married and majority were Hindu (26). And in contrast to the study “Perceived stress among students in virtual classrooms during the COVID-19 outbreak in KSA” where most responders were female (23).

## **Conclusion**

The stress level seems to be increased among tourism sector worldwide due to lockdown and has adversely affected the national economy. A concrete plan to overcome these situations is required for uplifting national economy and the mental health status of the hoteliers.

## Recommendations

Tourism being the backbone of nation and Pokhara being the major tourism hub of Nepal, Government of Nepal should plan for the appropriate and effective packages to uplift the tourism industry of Nepal. Once the tourism industries will regain the level of stress among the hoteliers due to COVID-19 pandemic will subside. Also the appropriate safety measures should be applied by the hoteliers to ensure the safe stay of tourists in their hotels during their stay. Internal tourism should be promoted first and gradually should focus in international tourists.

**Code availability** The software application or custom codes used in the research are available from the corresponding author (MD), upon reasonable request.

**Data availability** Data will not be shared publicly. The datasets and materials used and/or analyzed during the current study can be made available from the corresponding author on reasonable request.

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